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10/696,444	10/29/2003	Georg Michelitsch	282729US8X	6782

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EXAMINER	
MOON, SEOKYUN	
ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
12/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/696,444	MICHELITSCH ET AL.	
	Examiner	Art Unit	
	SEOKYUN MOON	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-27 and 29-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-27 and 29-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

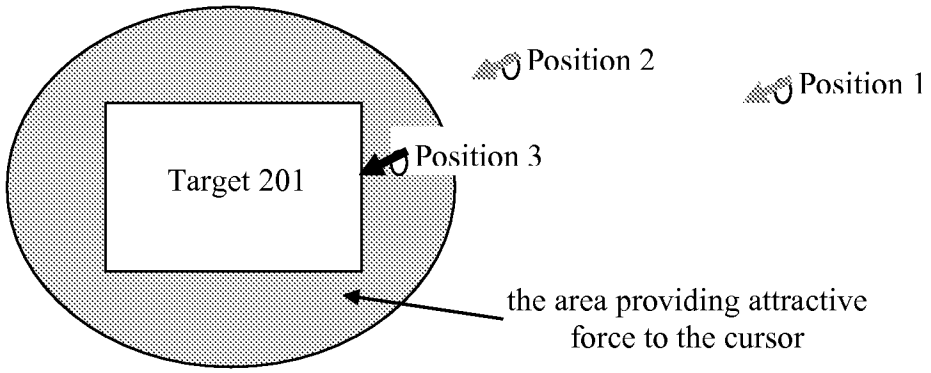
Response to Arguments

1. The Applicant's arguments filed on September 03, 2008 have been fully considered.

The Applicant argued that the prior art of record (US 2002/0109668, hereinafter "*Rosenberg*") does not teach the limitation, "*receiving velocity information data that is based on spatial vector positions by evaluating spatial directions independently from each other with respect to a position and spatial movement of at least one haptic device*", which is newly added in independent claims 18 and 35.

Examiner respectfully disagrees.

Examiner respectfully submits that, in Rosenberg's device [pars. (0076), (0077), (0079), and (0080)] velocity information data is determined based on spatial vector positions and each of spatial vector positions is determined by evaluating spatial directions independently from each other with respect to a position and spatial movement of at least one haptic device. For example, in Rosenberg's device [the drawing provided below], when a cursor (or a haptic device) moves from position 1 to position 2 and then moves from position 2 to position 3, the cursor is not only effected by a force produced corresponding to a vector from position 2 to position 3, but is also effected by a force provided corresponding to a vector from position 1 to position 2.



In this example, if the peripheral area around the target 201 is defined as the area of applying attractive force to the cursor and any area other than the target 201 and the peripheral area is defined as the area applying repulsive force to the cursor, when the cursor moves from position 1 to position 2 and then moves from position 2 to position 3, the cursor is not only effected by the attractive force caused by the vector from position 2 to position 3, but is also effected by the repulsive pulse caused by the vector from position 1 to position 2. As explained above, each of the spatial directions are evaluated and processed independently from each other with respect to the initial position of the cursor and the spatial movement of the cursor.

Accordingly, Examiner respectfully submits that Rosenberg teaches the newly added claim limitation.

Claim Objections

2. **Claim 34** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 18-27** and **29-36** are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenberg (US 2002/0109668).

As to **claim 18**, Rosenberg teaches a method for operating a haptic interface unit ("*interface device*") [par. (0012) lines 4-8 and par. (0025) lines 8-15], comprising:

receiving velocity information data that is based on spatial vector positions by evaluating spatial directions independently from each other with respect to a position and spatial movement of at least one haptic device [par. (0076) lines 8-11 and the explanation disclosed in "*Response to Arguments*" section provided on pages 2-3 of this Office Action];

generating interaction feedback force data ("*haptic effect*") based on and in dependence of at least the velocity information data [par. (0077) lines 7-13], the interaction feedback force data being representative for an interaction feedback force to be generated by the at least one haptic device [par. (0012) lines 8-12];

transmitting the interaction feedback force data to the at least one haptic device so as to generate the interaction feedback force [fig. 1];

providing an inverted damping operation mode [fig. 5c: the mode of the haptic device operated within the range of the velocity of $V1 < v < V2$ and par. (0012); replacing the linear function of fig. 5c with a step function] in which the interaction feedback force data are at least partly generated to be representative for an interaction feedback force which increases with a decreasing velocity and the interaction feedback force data are at least partly generated to be representative for an interaction feedback force which decreases with an increasing velocity, wherein the velocity is with respect to a respective haptic device or a pointing unit thereof; and

providing a holding force mode [fig. 5c: the mode of the haptic device operated within the range of the velocity of $0 < v < V1$] in which an absolute force value of the interaction feedback force or a vectorial component thereof is increased in a position dependent form [par. (0052)] to a predetermined hold force value or above ("*I*"), if the respective velocity or a vectorial component thereof decreases below a given threshold minimum velocity value ("V1"), the predetermined hold force value being larger than the interaction feedback force within the inverted damping operation mode.

As to **claim 19**, Rosenberg teaches the method comprising decreasing the absolute force value of the interaction feedback force or a vectorial component thereof to zero, if the respective velocity or a vectorial component thereof increases above a given threshold maximum velocity value [claim 26].

As to **claim 20**, Rosenberg teaches the method comprising performing the inverted damping operation mode with respect to vectorial components of the interaction feedback force and the velocity [par. (0075)].

As to **claim 21**, Rosenberg teaches the method comprising performing the inverted damping operation mode [fig. 5c: the mode of the haptic device operated within the range of the velocity of $0 < v < V1$] with respect to vectorial components of the interaction feedback force and the velocity in an independent manner (only the scale of the velocity matters to determine the magnitude of the force).

As to **claim 22**, Rosenberg [fig. 5c] teaches the method comprising generating the interaction feedback force data to describe the interaction feedback force as a damping force, so

as to generate an interaction feedback force acting against a given velocity or a vectorial component thereof [par. (0079) lines 11-18].

As to **claim 23**, Rosenberg [fig. 5c] teaches the method comprising generating the interaction feedback force data to describe the interaction feedback force as a damping force, so as to generate an interaction feedback force acting against a given velocity or a vectorial component thereof as a counterforce or a frictional force [par. (0079) lines 11-18].

As to **claim 24**, Rosenberg [fig. 5c] teaches the method comprising generating the interaction feedback force data to describe the interaction feedback force or a vertical component thereof as having an absolute force value f being, at least piecewise, a positive monotonically decreasing function g of the respective velocity v or of a vectorial component thereof to fulfill the relation $f(v) \propto g(v)$.

As to **claim 25**, Rosenberg [fig. 5c] teaches the method comprising selecting the at least piecewise positive and monotonically decreasing function g to fulfill at least piecewise the relation $g(v) = 1 / h(v)$ [claim 27], where h is at least piecewise a positive and monotonically increasing function of the velocity v or of a vectorial component thereof.

As to **claim 26**, Rosenberg [fig. 5c] teaches the method further comprising selecting the at least piecewise positive and monotonically decreasing function g to fulfill at least piecewise the relation $g(v) = 1 / |v|$ [claim 27], where v denotes a velocity or vectorial component thereof.

As to **claim 27**, Rosenberg [fig. 5a] teaches the method comprising selecting the at least piecewise positive and monotonically decreasing function g to be at least piecewise one of a step function and a staircase function..

As to **claim 29**, Rosenberg [par. (0052)] teaches the method comprising selecting the spatial vector position to describe a position of a respective haptic device.

As to **claim 30**, Rosenberg [par. (0052)] teaches the method comprising selecting the spatial vector position to describe a position of a corresponding abstract pointing means within a data structure.

As to **claim 31**, Rosenberg [par. (0052)] teaches the method comprising selecting the spatial vector position to describe a position of a corresponding abstract pointing means within a graphical user interface.

As to **claim 32**, Rosenberg teaches a haptic interface unit comprising means for performing the disclosed operating method and the steps thereof [abstract].

As to **claim 33**, Rosenberg teaches a computer readable storage medium (the memory included in the computer) [par. (0027) lines 1-8 and par. (0048)] having a computer program recorded thereon, the program adapted to perform a method when it is executed on a computer or a digital signal processing means for operating a haptic interface unit according to claim 18.

As to **claim 34**, Rosenberg teaches a computer readable storage medium, comprising the disclosed computer program product according to claim 33 [par. (0048)].

As to **claim 35**, Rosenberg teaches a method for operating a haptic interface unit ("*interface device*") [par. (0012) lines 4-8 and par. (0025) lines 8-15], comprising:

receiving velocity information data that is based on spatial vector positions by evaluating spatial directions independently from each other with respect to a position and spatial movement of at least one haptic device [par. (0076) lines 8-11 and the explanation disclosed in "*Response to Arguments*" section provided on pages 2-3 of this Office Action];

generating interaction feedback force data ("*haptic effect*") based on and in dependence of at least the velocity information data [par. (0077) lines 7-13], the interaction feedback force data being representative for an interaction feedback force to be generated by the at least one haptic device [par. (0012) lines 8-12];

transmitting the interaction feedback force data to the at least one haptic device so as to generate the interaction feedback force [fig. 1];

providing an inverted damping operation mode [figs. 5b and 5c: the mode of the haptic device operated within the range of the velocity of $V1 < v < V2$] in which the interaction feedback force data are at least partly generated to be representative for an interaction feedback force which increases with a decreasing velocity and the interaction feedback force data are at least partly generated to be representative for an interaction feedback force which decreases with an increasing velocity, wherein the velocity is with respect to a respective haptic device or a pointing unit thereof; and

providing a holding force mode [figs. 5b and 5c: the mode of the haptic device operated within the range of the velocity of $0 < v < V1$] in which an absolute force value of the interaction feedback force or a vectorial component thereof is increased in a position dependent form, in a step fashion [par. (0012) lines 12-16], to a predetermined hold force value or above, if the respective velocity or a vectorial component thereof decreases below a given threshold minimum velocity value ("*VI*"), the predetermined hold force value being larger than the interaction feedback force within the inverted damping operation mode.

As to **claim 36**, all of the claim limitations have already been discussed with respect to the rejection of claims 24 and 27.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEOKYUN MOON whose telephone number is (571)272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 1, 2008
/S. M./
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629